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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,799

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Axel Weyer

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8761

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EXAMINER

KERNS, KEVIN P

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,799	Applicant(s) WEYER ET AL.
	Examiner Kevin P. Kerns	Art Unit 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006 and 07 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/19/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

In this instance, the specification lacks section headings.

2. The disclosure is objected to because of the following informalities:

On page 2, replace "Knows" with "Known" in the 1st line of the 2nd paragraph.

On page 10, 6th line, replace "ladder" with "ladle".

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On page 15, 6th line, replace "ladder" with "ladle" after "Teeming".

Appropriate correction is required.

Claim Objections

3. Claims 9-11 are objected to because of the following informalities:

In claim 9, 3rd line from the end of the claim, replace "result" with "results".

In claim 10, 5th line, replace "temporarily" with "temporary".

In claim 11, 4th line, delete "mentioned above".

In claim 11, 6th line, replace "temporarily" with "temporary".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat.

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App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, independent claims 1 and 9 recite the broad recitation "liquid metals", and the claims also recite "in particular liquid steel" which is the narrower statement of the range/limitation.

With regard to independent claim 9, the phrase "*still* liquid strand" in the last two lines of the claim is unclear. Was "still" intended to be "steel" instead?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Streubel et al. (WO 02/090019 A1) – also see the US equivalent reference of Streubel et al. (US 7,025,118) for translation of the German text of WO 02/090019 A1.

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Regarding independent claims 1 and 9, Streubel et al. disclose both an apparatus and method of determining a position of a solidification point during continuous casting of liquid steel (abstract and Figure of WO 02/090019 A1, as well as the abstract; column 1, lines 15-26; column 2, lines 34-67; column 3, lines 1-53; column 4, lines 1-10; and Figure of equivalent US 7,025,118), in which the apparatus and method include the following features:

determining a liquid core volume of the liquid core 7 in the strand shell 8 of the cast strand 5 within a continuous casting mold 1 (column 3, lines 25-49); and

indirectly measuring the liquid core 7 (i.e. the solidification point 9 of the cast strand 5) by adjusting drive roller pairs (4,4') that support and guide the cast strand 5 based on a calculation model (for a momentary, or temporary, position of the solidification point during the casting process) via direct measurement of the adjustable drive roller pairs (4,4'), such that the liquid core 7 is continuously adjusted as dependent upon casting parameters, such as strand thickness, casting speed, casting temperature etc. (column 2, lines 42-57; column 3, lines 50-53; column 4, lines 1-10; and Figure).

Regarding claims 2 and 3, the measurement is operable to be further based on the adjustable thickness of the strand 5 (column 3, lines 31-45) and based on change of the stop plug position (i.e. liquid steel flow through melt inlet 6 of Figure 1) in front of the continuous casting mold 1 (which would be an inherent step since solidification is controlled based on the position and force applied by the support rollers (4,4') and the plug on the continuous casting mold 1 to not allow for liquid metal backflow out of the casting mold).

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Regarding claims 4 and 5, the measurement is operable to be further based on melt level and melt volume change of the receptacle adjacent the melt inlet 6, such that the solidification point 9 of the liquid core 7 in the strand shell 8 of the cast strand 5 is continuously adjustable (column 3, lines 50-53; column 4, lines 1-10; and Figure).

Regarding claims 6 and 8, the measurement is operable to be further based on continuously adjustable clamping forces and positions of the support rollers (column 3, lines 31-49; and Figure).

Regarding claim 7, the calculation model is based on automatic adjustment of the support rollers (column 3, lines 25-53).

Regarding claims 10 and 11, the support rollers (4,4') are adjusted by an adjustable piston-cylinder arrangement (i.e. position-controlled hydraulic cylinders), such that the support rollers (4,4') are arranged on the loose side of the casting mold 1, as this is the side where the support rollers (4,4') are operable to move into the other opposite rollers for compression on the cast strand 5 to temporarily change the local position of the solidification point 9 (column 3, lines 25-53; and Figure).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The Streubel, Weyer et al., Klassen, Sucker et al., Streubel et al., Von Wyl et al., Weyer et al., and Rittner et al. references are also cited in PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns
Primary Examiner
Art Unit 1793

/Kevin P. Kerns/
Primary Examiner, Art Unit 1793
July 9, 2010